HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF
MILTON J. ROSENAU, M.D.,
PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE, HARVARD MEDICAL SCHOOL,
BOSTON, MASSACHUSETTS,
AND
GEORGE W. McCOY, M.D.,
DIRECTOR OF HYGIENIC LABORATORY, UNITED STATES PUBLIC HEALTH SERVICE,
WASHINGTON, D. C.

Effective Malaria Control in a Rice-field District.—GEIGER, PURDY and TARBETT (*Jour. Am. Med. Assn.*, March 22, 1919, No. 12, lxxii, pp. 844–847) state that malaria has been eliminated from a typical rice-field district. The question of the flight of Anopheles quadrimaculatus may of necessity be regarded from two angles, that of experiment and that of observation. In one, the largest experiment of its kind ever undertaken in the United States, the record flight was one mile. In the other observation there has been recorded continuously and on different occasions a flight of one and seven-tenths miles. The use of 10 grains of quinin sulphate by the mouth for sterilization of the blood of malaria carriers is evidently efficient for one malaria season if used actively over a period of thirty days. The completely negative clinical history of the nineteen malaria carriers discovered on microscopic examination indicates, on the one hand, an immense difficulty in obtaining complete malaria control, but emphasizes, on the other hand, the importance of the detection of human carriers.

Persistence of the Virus of Poliomyelitis in the Nasopharynx. — FLEXNER and AMOSS (*Jour. Exper. Med.*, April 1, 1919, pp. 379–395) state that the epidemiology of poliomyelitis has still to be worked out in detail, as many factors governing the spread of the disease remain to be discovered. That the virus or microbic cause is communicated by personal contact is now generally admitted. That the virus occurs in the nasopharynx, which constitutes the chief locus of ingress and egress to and from the body, is also conceded. The fact that the virus has been, if rarely, detected in healthy persons who have been in intimate contact with early cases of poliomyelitis, and even in certain individuals who have recovered from the acute effects of the disease, has led to the generalization that like some other diseases of bacterial origin, and notably epidemic meningitis, healthy and chronic carriers of the virus are frequent. This view has received its main support from Kling, Pettersson and Wenstedt, whose studies have been discussed. A critical analysis of the basis of their contention fails, however, to carry conviction, and the doubt which has arisen as to the true interpretation of their results is deepened by the more searching tests of Flexner and Amoss. The results of their experiments conform closely with clinical experience in the United States, at least, and especially with the observations made by epidemiologists in the course of the wide epidemic in New York State and elsewhere during the summer and autumn of 1916. The conclusion reached at that time was to the effect that the communicability of the disease was a phenomenon chiefly of the early stages, while the frankly paralyzed person and the convalescent were to be feared much less. The authors state that in their experiments infection was secured with tissues obtained during the first week, approximately, of the disease, but not at later periods. The virus of poliomyelitis occurs in the nasopharynx of man and monkeys. In man it has been detected by the inoculation test in washings from acute cases, rarely in similar washings from healthy contacts, in the nasopharyngeal tissues obtained from fatal cases in the first week of infection, but rarely, if ever, from nasopharyngeal tissues removed surgically at later periods in the course of the disease. In monkeys, also, the virus has been detected in the secretions from acute experimental infections, in the nasopharyngeal tissues derived from early cases and rarely from cases several weeks or months after recovery from the acute symptoms. The inoculation of tonsils and adenoids obtained from cases of undoubted poliomyelitis either yielded definite results in the form of typical paralysis and histological lesions in the central nervous organs of the monkeys injected or no symptoms or lesions which could be confounded with poliomyelitis. The indefinite symptoms and atypical lesions described in a certain class of inoculated animals by Kling, Pettersson and Wernstedt were not encountered in the experiments of Flexner and Amoss. The deduction from the experiments reported is to the effect that the virus is regularly present in the nasopharynx in cases of poliomyelitis in the first days of illness, and especially in fatal cases; that it diminishes relatively quickly as the disease progresses, except in rare instances; and that it is unusual for a carrier state to be developed. Hence the period of greatest infectivity of patients would appear to be early in the disease, which is probably the time at which communication of the virus from person to person takes place. Available evidence proves that healthy carriers of the virus occur. The authors, however, possess data which indicate the frequency with which carriage arises. The fact that even after a severe and wide epidemic, such as occurred in the United States in 1916, the disease may virtually disappear within two or three years, points to the probability that enduring carriers of the active virus, whether healthy or chronic, are of exceptional occurrence.

The Role of the Hand in the Distribution of Influenza Virus and the Secondary Invaders.—LYNCH and CUMMING (*Military Surgeon*, December, 1918) state that influenza, as well as the other so-called airborne or respiratory diseases, is essentially a hand-to-mouth infection. There are major and minor modes of transmission by indirect contact: by the former through tepid mess-kit wash-water and by the latter through intermediate objects, the hand being the conveyor in both instances. Among troops approximately 75 per cent. of the cases arise by the major route. This applies to troop transports as well as camps. Transmission by direct contact is only subsidiary to the indirect routes. The adoption of a universal method of washing mess-kits in boiling water will enormously reduce the prevalence of all mouthborne infections. The prevention of the hand-to-mouth infections may